132951

ANALYTICAL REPORT
Prepared by
Lockheed Martin

South Central Terminal
Pana, IL

EPA Work Assignment # 0-072
LOCKHEED MARTIN Work Order # R1A00072
EPA Contract # 68-C99-223

ANALYTICAL REPORT

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South Central Terminal
Pana, IL

October 1999

EPA Work Assignment No. 0-072
LOCKHEED MARTIN Work Order No. R1A00072
EPA Contract No. 68-C99-223

Submitted to
A. Zownir
EPA-ERTC

M. Metz — Date — 10/7/99
Task Leader

D. Miller — Date — 10/7/99
Analytical Section Leader

S. Clapp — Date — 10/7/99
Program Manager

Analysis by:
Scott Lawson, GPL

Prepared by:
G. Karustis

Reviewed by:
D. Killeen

Table of Contents

Appendices will be furnished on request.

Introduction

REAC in response to WA # 0-072, provided analytical support for environmental samples collected from South Central Terminal, located in Pana, IL as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
07148	1	7/28/99	9/2/99	Drum Liquid	RCRA Metals	GPL
07148	1	7/28/99	9/2/99	Drum Liquid	Flash Point, pH	GPL
07148	2	7/28/99	9/2/99	Drum Liquid	Sulfides	GPL
07148	4	7/28/99	9/2/99	Drum Liquid	Sulfides	GPL
07149	1	7/28/99	9/2/99	Drum Liquid	Sulfides	GPL
07149	6	7/28/99	9/2/99	Drum Liquid	Sulfides	GPL
07151	20	7/28/99	7/30/99	Drum Liquid	TPH	Scott Lawson
07152	2	7/28/99	7/30/99	Drum Liquid	TPH	Scott Lawson

Analyses not presented in this report have been given in a prior report.

Case Narrative

The data in this report have been validated to two significant figures. Any other representation of the data is the responsibility of the user.

RCRA Metals in Waste Oil Package I 351

At the request of the Work Assignment Manager, the original request for TAL metals analysis was modified to RCRA metals and Tank No. 307 was added.

The acceptable QC limits for the relative percent difference was exceeded in the duplicate analysis of sample 26280 for lead (66%) The concentration of lead in sample 26280 should be regarded as estimated.

Flash Point and pH in Waste Oil Package I 350

At the request of the Work Assignment Manager, flash point and pH were added to the analyses.

Although the subcontract laboratory reported a pH for sample 26297, the term "pH" is only defined for aqueous media.

TPH in Waste Oil Package I 323

The vial containing sample 26609 was broken when received by the subcontract laboratory; the sample was not analyzed.

Reactive Sulfide and Sulfide in Waste Oil Package I 343

The holding times had expired before the subcontract laboratory received the samples.

With the permission of REAC, the subcontract laboratory determined the reactive sulfide content of the samples with USEPA Method 7.4.3 and the total sulfide content was determined as the sum of the acid soluble sulfide and the acid insoluble sulfide from USEPA Method 9030.

The acceptable QC limits for the holding times were exceeded by 28 days for reactive sulfide and by 30 days for sulfide for samples 26274, 26287, 26288, 26289 and 26304. The samples were not preserved for sulfide by refrigeration at 4° C nor was the pH adjusted to greater than 9 with a preservation mixture of zinc acetate/sodium hydroxide. The data are affected as follows:

The reactive sulfide results for samples 26274, 26287, 26288 and 26289 should be regarded as estimated. The reactive sulfide results for sample 26304 should be regarded as unusable. The sulfide results for sample 26287 should be regarded as estimated and for samples 26274, 26288, 26289 and 26304 the data should be regarded as unusable.

The percent recovery for the laboratory control sample for the reactive sulfide was 29%. The reactive sulfide for samples 26274, 26287, 26288 and 26289 should be regarded as estimated. The reactive sulfide for sample 24304 should be regarded as unusable.

Summary of Abbreviations

AA	Atomic Absorption
B	The analyte was found in the blank
BFB	Bromofluorobenzene
C	Centigrade
D	(Surrogate Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample
Dioxin	denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF
CLP	Contract Laboratory Protocol
COC	Chain of Custody
CONC	Concentration
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
DFTPP	Decafluorotriphenylphosphine
DL	Detection Limit
E	The value is greater than the highest linear standard and is estimated
EMPC	Estimated maximum possible concentration
ICAP	Inductively Coupled Argon Plasma
ISTD	Internal Standard
J	The value is below the method detection limit and is estimated
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDL	Method Detection Limit
MI	Matrix Interference
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MW	Molecular Weight
NA	either Not Applicable or Not Available
NC	Not Calculated
NR	Not Requested
NS	Not Spiked
% D	Percent Difference
% REC	Percent Recovery
PPB	Parts per billion
PPBV	Parts per billion by volume
PPMV	Parts per million by volume
PQL	Practical Quantitation Limit
QL	Quantitation Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SIM	Selected Ion Monitoring
TCLP	Toxic Characteristics Leaching Procedure
U	Denotes not detected
W	Weathered analyte; the results should be regarded as estimated

m^3	cubic meter	kg	kilogram	μg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram	ng	nanogram
μL	microliter				

*	denotes a value that exceeds the acceptable QC limit
	Abbreviations that are specific to a particular table are explained in footnotes on that table

Revision 1/15/99

SECTION I

Analytical Procedure for Total Petroleum Hydrocarbons in Waste Oil

The subcontract laboratory determined the total petroleum hydrocarbon content of the samples by analyzing them according to USEPA Method 418.1. The results of the analysis are listed in Table 1.1.

Analytical Procedure for Reactive Sulfide in Waste Oil

The subcontract laboratory determined the reactive sulfide concentration in the samples by analyzing them according to SW-846 7.3.4. The results of the analysis are listed in Table 1.2.

Analytical Procedure for Sulfide in Waste Oil

The subcontract laboratory determined the sulfide concentration in the samples by analyzing them according to SW-846 9030. The results of the analysis are listed in Table 1.2.

Analytical Procedure for Flash Point of Waste Oil

The subcontract laboratory determined the flash point of the samples by analyzing them according to SW-846 1010. The results of the analysis are listed in Table 1.3.

Analytical Procedure for RCRA Metals in Waste Oil

The subcontract laboratory determined the concentration of RCRA metals in the sample by analyzing it according to USEPA Methods 7471 and 6010. The results of the analysis are listed in Table 1.3.

Analytical Procedure for pH of Waste Oil

The subcontract laboratory determined the pH of the samples by analyzing them according to MCAWW 150.1. The results of the analysis are listed in Table 1.3.

Table 1.1 Results of the Analysis for TPH in Waste Oil**
WA # 0-072 South Central Terminal

Sample Number	Sampling Location	TPH** mg/kg	MDL mg/kg
Tap Water #1***	-	U	1.0
Tap Water #2***	-	U	1.0
Method Blank #1	-	U	25
Method Blank #2***	-	U	1.0
26590	Tank 13	>950000	125000
26591	Tank 32 A	520000	125000
26592	Tank 90	520000	50000
26593	Tank 100	560000	125000
26597	Tank 300	930000	125000
26599	Tank 304	920000	125000
26600	Tank 307	890000	125000
26601	Tank 311	560000	125000
26602	Tank 313 A	820000	500000
26603	Tank 401	940000	125000
26604	Tank 402	>950000	250000
26605	Tank 403	350000	12500
26606	Tank 404 A	870000	125000
26607	Tank 407	920000	125000
26610	Tank 411	680000	62500
26611***	Tank 413	460000	62500
26594***	Tank 102	U	9.1
26595***	Tank 108	U	8.3
26596***	Tank 118	6500	2100
26598***	Tank 302	U	7.7
26608***	Tank 408	U	5.0

** TPH denotes Total Petroleum Hydrocarbons
*** the units for this sample are mg/L

Table 1.2 Results of the Analysis for Reactive Sulfide and Sulfide in Waste Oil
WA # 0-072 South Central Terminal

Sample ID Number	Sampling Location	Reactive Sulfide mg/L	MDL mg/L	Sulfide mg/L	MDL mg/L
Method Blank	-	U	10	U	12
24274	TANK 32A	25	10	U	12
26287	TANK 115	15	10	24	12
26288	TANK 116	10	10	U	12
26089	TANK 117	10	10	U	12
26304	TANK 401	U	10	U	12

Table 1.3 Results of the Analysis for Flash Point, RCRA Metals and pH in Waste Oil
WA # 0-072 South Central Terminal

Sample Number	Sampling Location	Flash Point °C	MDL °C	Metal	RCRA Metals mg/Kg	MDL mg/Kg	pH	MDL
26271	TANK 13	32	NA	NA	NR	NA	NR	NA
26281	TANK 100	40	NA	NA	NR	NA	NR	NA
26292	TANK 300	45	NA	NA	NR	NA	NR	NA
26295	TANK 304	30	NA	NA	NR	NA	NR	NA
26297	TANK 307	37	NA	NA	NR	NA	5.5	NA
Blank	-	NA	NA	Mercury	U	0.030	NA	NA
Blank	-	NA	NA	Silver	U	0.300	NA	NA
Blank	-	NA	NA	Arsenic	U	0.500	NA	NA
Blank	-	NA	NA	Barium	U	0.500	NA	NA
Blank	-	NA	NA	Cadmium	U	0.300	NA	NA
Blank	-	NA	NA	Chromium	U	0.500	NA	NA
Blank	-	NA	NA	Lead	U	0.300	NA	NA
Blank	-	NA	NA	Selenium	U	0.500	NA	NA
26280	TANK 90	NR	NA	Mercury	U	0.03	NR	NA
26280	TANK 90	NR	NA	Silver	U	0.50	NR	NA
26280	TANK 90	NR	NA	Arsenic	U	0.83	NR	NA
26280	TANK 90	NR	NA	Barium	5.3	0.83	NR	NA
26280	TANK 90	NR	NA	Cadmium	U	0.50	NR	NA
26280	TANK 90	NR	NA	Chromium	1.7	0.83	NR	NA
26280	TANK 90	NR	NA	Lead	96.3	0.50	NR	NA
26280	TANK 90	NR	NA	Selenium	U	0.83	NR	NA

SECTION II

Results of the Blank Spike Analysis for TPH in Waste Oil

The percent recovery of the blank spike, listed in Table 2.1, was 101 and it was within the acceptable QC limits.

Results of the Matrix Spike Analysis for TPH in Waste Oil

Sample 26600 chosen for the matrix spike analysis (MS). The percent recovery, listed in Table 2.2, was 88 and it was within the acceptable QC limits that are specified in the functional guidelines.

Results of the Duplicate Analysis for TPH in Waste Oil

Sample 26600 was chosen for the duplicate analysis for TPH in waste oil. The relative percent difference, listed in Table 2.3, was 12 and it was within the acceptable QC limits that are specified in the functional guidelines.

Results of the Analysis of the Laboratory Control Sample for TPH in Waste Oil

The results of the analysis of the laboratory control sample for TPH in waste oil are listed in Table 2.4. The percent recoveries were 99 and 102 and both recoveries are within the acceptable QC limits.

Table 2.1 Results of the Blank Spike Analysis
for TPH in Waste Oil
WA # 0-072 South Central Terminal

Analyte	Sample Conc mg/kg	Spike Conc mg/kg	Rec Conc mg/kg	% Rec	QC Limits (%Rec)
TPH	U	2.49	2.51	101	80-120

Table 2.2 Results of the Matrix Spike Analysis
for TPH in Waste Oil
WA # 0-072 South Central Terminal

Analyte	Sample ID	Sample Conc mg/kg	Spike Conc mg/kg	Rec Conc mg/kg	% Rec	QC Limits (%Rec)
TPH	26800	891565	124500	1001623	88	75-125

Table 2.3 Results of the Duplicate Analysis
for TPH in Waste Oil
WA # 0-072 South Central Terminal

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD	QC Limits
TPH	26600	890000	1006626	12	20

Table 2.4 Results of the Analysis
of the Laboratory Control Sample
for TPH in Waste Oil
WA # 0-072 South Central Terminal

Sample Type	Analyzed Value mg/kg	Certified Value mg/kg	% Rec	QC Limits
Solid	251	255	99	80-120
Liquid**	2.594	2.55	102	80-120

** denotes that the units for this sample are mg/L

Results of the Analysis of the Laboratory Control Sample for Reactive Sulfide in Waste Oil

The results of the analysis of the laboratory control sample for reactive sulfide in waste oil are listed in Table 2.5. The percent recovery was 29. QC limits are not available for this analysis.

Results of the Duplicate Analysis for Reactive Sulfide in Waste Oil

A non-REAC sample was chosen for the duplicate analysis for reactive sulfide in waste oil. The relative percent difference, listed in Table 2.6, was 0 (zero). QC limits are not available for this analysis.

Table 2.5 Results of the Analysis
of the Laboratory Control Sample
for Reactive Sulfide in Waste Oil
WA # 0-072 South Central Terminal

Analyte	Analyzed Value mg/L	Certified Value mg/L	% Rec
Reactive Sulfide	35	120	29

Table 2.6 Results of the Duplicate Analysis
for Reactive Sulfide in Waste Oil
WA # 0-072 South Central Terminal

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD
Reactive Sulfide	OU3-IW-27-0827****	10	10	0

**** denotes that this is a non-REAC sample

Results of the Matrix Spike Analysis for RCRA Metals in Waste Oil

Sample 26280 was chosen for the matrix spike (MS) for RCRA metals in waste oil. The reported percent recoveries, listed in Table 2.7, ranged from 92 to 121 and all six calculated values were within the acceptable QC limits. One value was not calculated because the concentration of analyte in the sample was greater than four times the concentration spiked.

Results of the Duplicate Analysis for RCRA Metals in Waste Oil

The results of the duplicate analysis (of sample 26280) for RCRA metals in waste oil are reported in Table 2.8. The relative percent differences of the three calculated values ranged from 14 to 66. Five relative percent differences were not calculated because the analyte was not detected in either analysis.

Results of the Analysis of the Laboratory Control Sample for RCRA Metals in Waste Oil

The results of the analysis of the laboratory control sample for RCRA metals in waste oil are listed in Table 2.9. The percent recoveries ranged from 99 to 110. QC limits are not available for this analysis.

Table 2.7 Results of the Matrix Spike Analysis
for RCRA Metals in Waste Oil
WA # 0-072 South Central Terminal

Metal	Sample ID	Sample Conc mg/kg	Spike Conc mg/kg	Rec Conc mg/kg	% Rec	QC Limits (%Rec)
Arsenic	26280	U	6.56	6.74	103	75-125
Barium	26280	5.3	327.87	307.94	92	75-125
Cadmium	26280	U	8.20	7.52	92	75-125
Chromium	26280	1.7	32.79	32.79	95	75-125
Lead	26280	96.3	3.28	83.14	NC	75-125
Selenium	26280	U	1.64	1.99	121	75-125
Silver	26280	U	8.20	7.55	92	75-125

Table 2.8 Results of the Duplicate Analysis
for RCRA Metals in Waste Oil
WA # 0-072 South Central Terminal

Metal	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	MDL mg/kg	RPD	QC Limits
Arsenic	26280	U	U	0.83	NC	<20**
Barium	26280	5.26	4.59	0.83	14	<20**
Cadmium	26280	U	U	0.50	NC	<20**
Chromium	26280	1.65	0.98	0.83	51	<20**
Lead	26280	96.3	48.77	0.50	66	<20**
Selenium	26280	U	U	0.83	NC	<20**
Silver	26280	U	U	0.50	NC	<20**
Mercury	26280	U	U	0.03	NC	<20**

** denotes that this limit applies to concentrations that are greater than 5 times the MDL

Table 2.9 Results of the Analysis of the Laboratory Control Sample for RCRA Metals in Waste Oil
WA # 0-072 South Central Terminal

Metal	Analyzed Value mg/kg	Certified Value mg/kg	% Rec
Arsenic	40.3	36.5	110
Barium	123.0	112.0	110
Cadmium	35.6	34.6	103
Chromium	113.7	108.0	105
Lead	53.8	50.2	107
Mercury	1.0	1.0	100
Selenium	45.2	45.7	99
Silver	36.6	34.1	107

Lockheed Martin Technology Services Group
Environmental Services Reac
2890 Woodbridge Avenue, Building 209 Annex Edison, NJ 08837
Telephone 732-321-4200 Facsimile 732-494-4021

LOCKHEED MARTIN

GPL
202 Perry Parkway
Gaithersburg, MD 20877

Attn: Paul Ioannides

27 July 1999

Project # RIA-00072 South Central Terminal

As per Lockheed Martin / REAC Purchase Order GA90550J49, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
TAL Metals\ SW-846-6010 or Series 7000	Drum Waste	15
TOX\ SW-846-9020B	Drum Waste	42
BTU\ ASTM D1989	Drum Waste	22
Ammonia\ EPA -350	Drum Waste	5
Sulfides\ SW-846-9031	Drum Waste	18
Asbestos\ PLM	Bulk Density	21
Data package: Package with Diskette Deliverable		

Samples are expected to arrive at your laboratory the week of July 26, 1999. All applicable QA/QC analysis as per method, will be performed on our sample matrix. Preliminary sample and QC result tables plus a signed copy of our Chain of Custody must be faxed to REAC 10 business days after receipt of the last samples. The complete data package is due 21 business days after receipt of the samples. The complete data package must include all items on the deliverables checklist. **Expect all samples to be difficult matrix and all raw data must be included in final analytical report.**

All sample and QC results(ie: LCS, Duplicates, and Blanks) must be summarized in a ExCel diskette deliverable.

Please submit all reports and technical questions concerning this project to **John Johnson at (732) 321-4248 or fax to (732) 494-4020**. Any contractual question, please call Cynthia Lentini at (732) 321-4296.

Sincerely,

Misty Barkley

Misty Barkley
Data Validation and Report Writing Group Leader
Lockheed Martin / REAC Project

MB:jj Attachments

cc. R. Singhvi
A. Zownir
00072\non\mem\9907\sub\00072Con
V. Kansal
Subcontracting File
D. Angwenyi
C. Lentini
M. Metz
M. Barkley

Lockheed Martin Technology Services Group
Environmental Services Reac
2890 Woodbridge Avenue, Building 209 Annex Edison, NJ 08837
Telephone 732-321-4200 Facsimile 732-494-4021

LOCKHEED MARTIN

Scott Lawson Group
29 River Road Suite 18
Bow, NH 03304

Attn: Jennifer Scott

28 July 1999

Project # RIA-00072 South Central Terminal

As per Lockheed Martin / REAC Purchase Order GA90551J49, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
TPH\ EPA 418.1	Drum Waste	22
Data package: Package with Diskette Deliverable		

Samples are expected to arrive at your laboratory the week of July 26, 1999. **All applicable QA/QC analysis as per method, will be performed on our sample matrix.** Preliminary sample and QC result tables plus a signed copy of our Chain of Custody must be faxed to REAC 10 business days after receipt of the last samples. The complete data package is due 21 business days after receipt of the samples. The complete data package must include all items on the deliverables checklist. If the analytical method specified above is different than what your laboratory routinely uses then please specify the method you intend to perform. **Expect all samples to be difficult matrix and all raw data must be included in final analytical report.**

All sample and QC results(ie: LCS, Duplicates, and Blanks) must be summarized in a ExCel diskette deliverable.

Please submit all reports and technical questions concerning this project to **John Johnson at (732) 321-4248 or fax to (732) 494-4020**. Any contractual question, please call Cynthia Lentini at (732) 321-4296.

Sincerely,

Misty Barkley
Data Validation and Report Writing Group Leader
Lockheed Martin / REAC Project

MB:jj Attachments

cc: R. Singhvi
A. Zownir
00072\non\mem\9907\sub\00072Con2
V. Kansal
Subcontracting File
D. Angwenyi
C. Lentini
M. Metz
M. Barkley

Fax

Please deliver immediately to:	Paul Ioannides
of:	GPL
Fax number:	8-301-840-1209
Voice number:	
Fax received from:	John Johnson
of:	Lockheed Martin
Fax number:	732-494-4020
Voice number:	732-321-4248
Date:	9/2/99
Time:	2:39:22 PM
Number of Pages:	1
Subject:	South Central Terminal

Message:

We would like additional analyses done on the samples you have in house. The analyses are as follows

	Flash Point	pH	RCRA Metals
Tank No.	13		
	100		
	300		
	304		
	307	307	90

REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAIN OF CUSTODY RECORD

Project Name: South Central Terminal (SCT)
Project Number: RIA 00072
RFW Contact: Mike Metz Phone: 732 321 4200

No: 07148

SHEET NO. 1 OF 3

Sample Identification / Analyses Requested

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	TOX	BTU	Sulfides	Ammonia
	26270	TANK 6	TW	28-July-99	1	32oz JAR / None	✓			
	26271	TANK 13 ★					✓	✓		
	26272	TANK 30					✓			
	26273	TANK 31					✓			
	26274	TANK 32A					✓	✓	✓	
	26275	TANK 34					✓			
	26276	TANK 40					✓			
	26277	TANK 41					✓			
	26278	TANK 42					✓			
	26279	TANK 43 ○					✓			
	26280	TANK 90 ○					✓	✓	✓	
	26281	TANK 100 ★					✓	✓		
	26282	TANK 102					✓	✓		
	26283	TANK 103					✓			
	26284	TANK 108					✓	✓		
	26285	TANK 111					✓			
	26286	TANK 113							✓	✓
	26287	TANK 115							✓	✓
	26288	TANK 116							✓	✓
	26289	TANK 117	TW	28-July-99	1	32oz JAR / None			✓	✓

Matrix:
SD - Sediment
DS - Drum Solids
DL - Drum Liquids
X - Other
FW - Potable Water
GW - Groundwater
SW - Surface Water
SL - Sludge
S - Soil
W - Water
O - Oil
A - Air

(TW - Tank Waste Liquids)

★ Determine Flash Point (Metz)
○ Analyze for RCRA Metals (Metz)

Special Instructions:
(1) TOX - SW846 9020B
(2) BTU - ASTM D1989
(3) Sulfides - SW846 9031
(4) Ammonia - EPA 350

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All Analyses	Metz	7/29/99									

FORM #4

8/91

00023

REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAIN OF CUSTODY RECORD

Project Name: South Central Terminal (S.T)
Project Number: RIA 00072
RFW Contact: Mike Metz Phone: 732 321 4266

No: 07149

SHEET NO. 2 OF 3

Sample Identification / Analyses Requested

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	TOX	BTU	Sulfides	Ammonia
	26290	TANK 118	TW	28-July-99	1	32oz SAR / None	✓	✓		
	26291	TANK 119							✓	✓
	26292	TANK 300 *					✓	✓		
	26293	TANK 301					✓			
	26294	TANK 302					✓	✓	✓	
	26295	TANK 304 *					✓	✓		
	26296	TANK 305					✓			
	26297	TANK 307 * ●					✓	✓		
	26298	TANK 309					✓			
	26299	TANK 310					✓			
	26300	TANK 311					✓	✓	✓	
	26301	TANK 312					✓			
	26302	TANK 313					✓	✓	✓	
	26303	TANK 314					✓			
	26304	TANK 401					✓	✓	✓	
	26305	TANK 402					✓	✓	✓	
	26306	TANK 403					✓	✓	✓	
	26307	TANK 404					✓	✓	✓	
	26308	TANK 406					✓			
	26309	TANK 407	TW	28-July-99		32oz SAR / None	✓			

Matrix:
SD - Sediment; DS - Drum Solids; DL - Drum Liquids; X - Other; (TW - TANK WASTE LIQUIDS)
PW - Potable Water; GW - Groundwater; SW - Surface Water; SL - Sludge
S - Soil; W - Water; O - Oil; A - Air

* Determine Flash Point (MCL)
● Determine pH (MCL)

Special Instructions:
① TOX - SW846 9020B
② BTU - ASTM D1989
③ Sulfides - SW846 9031
④ Ammonia - EPA 350

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All Analyses	Mike Metz	7/29/99									

FORM #1

8/94

SLG2 #905493

REAC, E. .on, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAI)F CUSTODY RECORD

Project Name: South Central Terminal (SCT)
Project Number: RIA 00072
RFW Contact: Mike Metz Phone: 732 321 4206

No: 07151
SHEET NO. 1 OF 2

Sample Identification / Analyses Requested

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	TPH
32573	26590	TANK 13	LTW	28-July-99	1	40z TAR/None	✓
74	26591	TANK 32A			1		✓
75	26592	TANK 96			1		✓
76	26593	TANK 100			1		✓
77	26594	TANK 102			1		✓
78	26595	TANK 108			1		✓
79	26596	TANK 118			1		✓
80	26597	TANK 300			1		✓
81	26598	TANK 302			1		✓
82	26599	TANK 304			1		✓
83	26600	TANK 307			1		✓
84	26601	TANK 311			1		✓
85	26602	TANK 313A			1		✓
86	26603	TANK 401			1		✓
87	26604	TANK 402			1		✓
88	26605	TANK 403			1		✓
89	26606	TANK 404A			1		✓
90	26607	TANK 407			1		✓
91	26608	TANK 408			1		✓
92	26609	TANK 409	↓	↓	1	↓	✓

Matrix:

SD -	Sediment	PW -	Potable Water	S -	Soil
DS -	Drum Solids	GW -	Groundwater	W -	Water
DL -	Drum Liquids	SW -	Surface Water	O -	Oil
X -	Other	SL -	Sludge	A -	Air

(LTW) - Liquid Tank Waste

Special Instructions:
(1) TPH EPA 918.1

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All Analyses	Mike Metz (Mail)	7/29/99	Kelly Martel	7/30/99	0955						

FORM #4 8/94

00025

REAC, E[illegible]on, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAI[illegible] F CUSTOD[illegible] RECORD

SLGLit 795493

Project Name: South Central Terminal (SCT)
Project Number: RIA 00072
RFW Contact: Mike Metz
Phone: 732 321 4200

No: 07152

SHEET NO 1 OF 2

Sample Identification — **Analyses Requested**

SLGL REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	(1) TPH			
132593	26610	Tank 411	LTW	28-July-99	1	4oz JAR / None	✓			
94	26611	Tank 413	LTW	28-July-99	1	4oz Jar / None	✓			

Matrix:

SD -	Sediment	PW -	Potable Water	S -	Soil
DS -	Drum Solids	GW -	Groundwater	W -	Water
DL -	Drum Liquids	SW -	Surface Water	O -	Oil
X -	Other	SL -	Sludge	A -	Air

(LTW) - Liquid Tank Waste

Special Instructions:
(1) TPH EPA 418.1

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

① Analyze [illegible]

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All/Analysis	[illegible] (mail)	7/29/99	Kelly Mert[illegible]	7/30/99	0955						

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